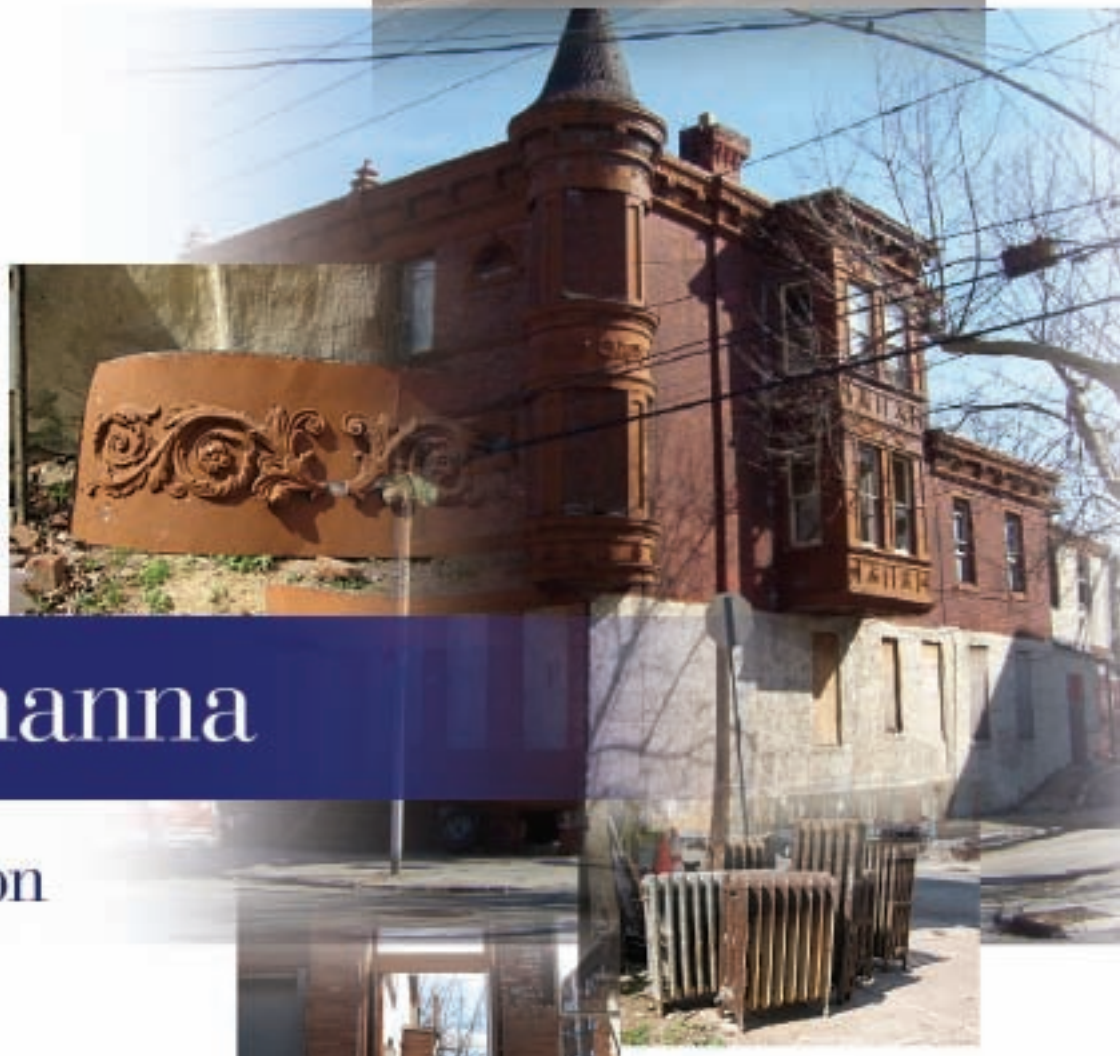

Susquehanna

Deconstruction Pilot Project Report

Prepared by:
Institute for Local Self-Reliance
in partnership with the
Hamer Center for
Community Design

Funded by:
US Environmental
Protection Agency

The Institute for Local Self-Reliance (ILSR) produced The Susquehanna Deconstruction Pilot Project Report in partnership with the Hamer Center for Community Design.

Linda Knapp, ILSR Senior Program Manager and the principal author of the document, recognizes the following partners for their valuable contributions in making the project a success:

- US Environmental Protection Agency for funding support;
- Kevin Brooks and the KBS crew for their hard work, creativity, and resourceful in demonstrating the cost-effective of deconstruction;
- The City of Philadelphia Neighborhood Transformation Initiative for providing a building for deconstruction;
- Avi Golen, Construction Waste Management, for his technical expertise in assisting with the project report.

Institute for Local Self-Reliance

927 15th Street, NW, 4th Floor
Washington, DC 20005
Phone: 202-898-1610
Fax: 202-898-1612
Email: info@ilsr.org
www.ilsr.org

Since 1974, the Institute for Local Self-Reliance ((ILSR) has advised citizens, activists, policymakers, and entrepreneurs on how to design and implement state-of-the-art recycling technologies, policies, and programs with a view to strengthening local economies. ILSR's mission is to provide the conceptual framework, strategies, and information to aid the creation of ecologically sound and economically equitable communities. ILSR has been an early champion of building deconstruction, authoring three major reports on the subject, coordinating the first national conference on deconstruction, helping to start deconstruction enterprises, and providing technical training to workers.

Hamer Center for Community Design

105 Stuckeman Family Building
University Park, PA 16802
Phone: 814-865-5300
Email: hamercenter@psu.edu
www.hamercenter.psu.edu

As a think tank and catalyst, the Hamer Center for Community Design supports collaborative research projects, facilitates dialogue between the academic and practitioner communities, and recognizes excellence in design from an international perspective. The Hamer Center is guided by geometries of change at four scales of intervention—citizenship, community, public, and democracy. To this end, the Hamer Center shares educational resources, serves as a forum for collaboration, facilitates networking, connects funding to initiatives, and promotes practice and research projects connected to Penn State University faculty and students.

Table of Contents

Susquehanna Deconstruction Pilot Project Summary Spring 2006

The Institute for Local Self-Reliance (ILSR) in cooperation with Penn State's Hamer Center for Community Design (Hamer Center) conducted a deconstruction pilot project to determine cost-effective methods to remove lumber and other materials from a Neighborhood Transformation Initiative abandoned house. The US Environmental Protection Agency funded the project and the City of Philadelphia provided the house for deconstruction.

Kevin Brooks Salvage (KBS), a local minority contractor, performed the deconstruction work on the 3224 Susquehanna unit, half of a residential twin building. ILSR and the Hamer Center selected KBS to do the work because the firm provided the lower bid and the more complete bid package.

The project work took place from March 27-April 7, 2006. At the Hamer Center's direction, the KBS crew experimented with the use of a mechanized, panelized approach of removing lumber. The dismantling process involved cutting the roof and floor panels into sections and removing them to an off-site location for processing.

The project diverted bricks, lumber, metal, and architectural features from disposal:

- Most of the bricks were used for on-site backfill.
- Some lumber was sold to a broker for remilling: pine flooring was sold for reuse.
- Metal was sold to local scrap dealers.
- Architectural features were marketed through KBS's architectural salvage business, Found Matter.

The total value of the recovered materials is $7,530, and, as of December 2006, $6,530 of materials have been sold or directly used by KBS. The remaining $1,000 worth of materials is for sale in the Found Matter store.

The Susquehanna project data demonstrate that deconstruction can be cost-competitive with hand demolition when there are sufficient recoverable materials with market value to offset higher labor costs. The $8.94 net cost per square foot for the Susquehanna project falls within the range of the average hand demolition cost ($7.75 - $9.30).

ILSR and KBS believe that costs could be even lower in future projects based on the following factors:

- On-time dumpster placement, removal, and replacement procedures – delays in placing and removing full dumpsters resulted in additional labor costs because workers had to handle some waste materials more than once.
- Better on-site efficiency utilizing improved practices based on lessons learned from the pilot.
- Improving the economy of scale by removing more than one house at a time. The original goal was the deconstruction of two adjoining housing units that would have resulted in a lower cost per unit than from removal of a single unit.

Susquehanna Deconstruction Pilot Project Summary Spring 2006

continued

Inquirer Real Estate Writer, Alan Heavens, recognized the innovative nature of the Susquehanna Deconstruction Pilot, and featured the project in an article entitled "Old Homes Become Donors for New Ones" in the Sunday edition on April 16, 2006. Two weeks later, Mr. Heavens gave a photographic presentation of the project at the National Association of Real Estate Editors' 06 Spring Journalism Conference in Charlotte, North Carolina.

ILSR also presented the project findings to the City of Philadelphia NTI program staff, the Delaware Valley Green Building Council Board of Directors, the Sustainable Business Network Steering Committee, members of the American Institute of Architects/Philadelphia Chapter Committee on the Environment, and members of the Mid-Atlantic Consortium of Recycling and Economic Development Officials (MACREDO).

The Susquehanna Deconstruction project has been successful in:

- Demonstrating a cost-effective approach in removing lumber and other recoverable materials from abandoned houses.
- Contributing to the development of the emerging restoration industry in Southeastern Pennsylvania by increasing awareness of deconstruction and architectural salvage among the green building community, local architects, city officials, and the general public.
- Assisting KBS in securing additional deconstruction and architectural work in the region.

This innovative project has been very important because it provided the opportunity to explore ways to be more effective in our recovery of valuable, used building materials. At the same time, innovative initiatives can be very challenging because they require all involved to think and act differently from their normal practices. ILSR acknowledges all of the partners – US Environmental Protection Agency, the City of Philadelphia NTI Program, Kevin Brooks Salvage, and the Hamer Center – for their willingness to think "outside the box" and for their patience and creativity in addressing the many obstacles that were encountered throughout the process. A special word of thanks is extended to Avi Golen, Construction Waste Management, for his technical expertise in assisting with the preparation of this report.

The Susquehanna Project success is due to the teamwork of all the participating partners.

This report is organized in the following way:

Section One: Description of the step-by-step process in preparing for the on-site deconstruction including:

- Request for Qualifications (RFQ) Process
- Evaluating Properties for Deconstruction
- Request for Bids (RFB) and Final Site Selection
- Contractual Responsibilities
- Final Preparations

Section Two: Photographic review of the on-site deconstruction.

Section Three: Summary of results and project findings.

Appendices: Copies of the project's RFQ and RFB.

SECTION ONE: PREPARING FOR ON-SITE DECONSTRUCTION

Request for Qualifications Process

Brad Guy, Hamer Center Associate Researcher, prepared the project's request for qualifications (RFQ) using language and concepts from several model green building documents. The RFQ stated up front the project's overall purpose in deconstructing and recovering building materials from one or more row houses condemned by the City of Philadelphia. The project's specific focus was exploring innovative techniques for dismantling urban row houses to reclaim the maximum amount of roof and floor structural materials in the most cost-effective manner for reuse and recycling.

The RFQ (see Appendix A) outlined:

- Services to be required
- Submittal requirements
- Additional considerations for evaluation
- Schedule

As basis for award, the RFQ stated that the contract would be awarded to the contractor offering the most favorable terms, and with the following factors being considered:

- Price
- Qualifications and capabilities
- Proposed techniques to recover materials
- Waste management strategy
- Disposition of recovered materials
- Personnel
- Schedule

In January 2005, ILSR distributed the RFQ to seventeen prospective salvage and deconstruction companies identified by the Hamer Center, as well as to the Board of Directors of the Delaware Valley Green Building Council. As a result of the outreach effort, ILSR received two submissions by the March 11, 2005 deadline. ILSR and the Hamer Center carefully reviewed the materials and determined that both firms were qualified and would be invited to submit a bid proposal for the designated buildings.

Evaluating Properties for Deconstruction

There were some initial delays in identifying prospective buildings, and this was, in part, due to a change in leadership with the City's Neighborhood Transformation Initiative (NTI) program. Although NTI had previously endorsed the deconstruction pilot project, it became necessary to secure support from the new leadership. To address this need, Michelle Knapik, from the City's Municipal Energy Office, arranged for Linda Knapp, ILSR Senior Program Manager, and Brad Guy to give a project presentation to Tumar Alexander, the new Managing Director's Office NTI Liaison in charge of demolition, and Tom DeFant, Hill International, in January 2005.

Following the meeting, Mr. Alexander agreed to support the project and consulted with the City's Law Department to determine the best method for granting permission to ILSR to deconstruct at least one NTI condemned building. The City's Department of Licenses and Inspections (L&I) provided Mr. Guy with a list of prospective properties, and an L&I representative accompanied him on his site visits. After reviewing a number of potential sites, Mr. Guy recommended properties at 3947 and 3949 Aspen Streets as the best prospects for the project.

On March 17, ILSR and the Hamer Center arranged a bidders' site visit at the Aspen Street properties so that the two teams could see the structures and prepare their bid applications. During the site visit with the L&I inspector present, a local resident confronted the project group with the claim that he still retained ownership of the two buildings. After some discussion and police intervention, the local resident agreed to go down to City Hall to verify his title on the buildings.

Given the confusion over the properties, ILSR requested that the City provide alternative buildings to evaluate for the project.

After site visits to additional prospective buildings, the Hamer Center recommended deconstruction of the house at 3222 Susquehanna Avenue and, possibly, the attached building at 3224 Susquehanna. On May 24, 2005, ILSR and the Hamer Center conducted an on-site meeting for the two qualified firms so that they could tour the 3222 building in preparation for responding to the request for bids. Representatives from both companies expressed interest in deconstructing both buildings, rather than the one. They recognized the value in recovering some of the architectural features from the 3224 building. ILSR agreed to check with the City about the possibility of dismantling both buildings.

The next day, May 25th, ILSR and Hamer Center representatives met with City staff and contractors to review the next steps in the project including development of the City contract granting ILSR rights to deconstruct the building/s. Michelle Knapik, Municipal Energy Office, had been the person shepherding the project through the City bureaucracy. Because Ms. Knapik decided to take a new position outside of City government, ILSR met directly with other key City staff involved in this process including Mr. Alexander, Tom DeFant, and Gerald Leatherman, City of Philadelphia Law Department.

Meeting topics included asbestos abatement, prevailing wage requirements, insurance, utility disconnects, and closure responsibilities. The City agreed that ILSR could deconstruct either one or both of the Susquehanna properties. ILSR decided to make the determination of the number of buildings based on the responses to the request for bids -- both proposed buildings would be deconstructed if the cost fell within the project budget.

Request for Bids and Final Site Selection

The Hamer Center prepared the Susquehanna Project Request for Bids (RFB) and, ILSR emailed the document to the two qualified firms (see Appendix B) on June 6, 2005. Both teams responded by the June 14th deadline and ILSR in consultation with the Hamer Center chose Kevin Brooks Salvage (KBS), a Philadelphia-based firm, as the deconstruction contractor because the company submitted the lower bid and the more complete bid package. KBS's total bid amount for deconstructing both properties fell within the project budget and ILSR officially requested permission from the City to deconstruct the two Susquehanna houses.

Contractual Responsibilities

From July – October 2005, ILSR worked to ensure that all the necessary steps were taken to prepare for the on-site deconstruction:

- Enrollment of ILSR staff and its subcontractors, the Hamer Center and KBS, in the City's Owner-Controlled Insurance Program (OCIP).
- Negotiation of the subcontractor agreement with KBS for the deconstruction services.
- Review of the City's asbestos assessment report for the two buildings.
- Utility disconnects completed.
- Contract with the City in place.

The City informed ILSR during the last week of October that the contract was officially approved. On October 25, 2005, Ms. Knapp and Mr. Guy met with NTI representatives to work out the final details for the project start-up scheduled for early November. At the meeting, a representative from Hill International, NTI's contractor, informed ILSR that KBS would need to submit a safety manual for approval, sign an OSHA agreement, and have a certified safety inspector on site during the duration of the project.

On October 27, 2005, the City's attorney, Gerald Leatherman, informed ILSR that the property at 3222 Susquehanna was no longer available for the project, and that the organization had the option of deconstructing the other half of the twin, 3224 Susquehanna, or considering other properties for deconstruction.

During the next few weeks, ILSR, in consultation with the Hamer Center and KBS, considered the alternatives and decided to proceed with the deconstruction of 3224 Susquehanna. The Hamer Center had already invested considerable time in evaluating the building and the project team was concerned that the selection of a new site would require too much time.

Final Preparations

KBS worked to meet the final project requirements including the preparation of a Safety Manual, signing an OSHA agreement, and identifying a certified safety inspector. In early March 2006, ILSR received approval from the City to proceed with the project. The project team set March 27, 2006 as the start date for deconstruction of the 3224 Susquehanna property.

SECTION TWO:
PHOTOGRAPHIC REVIEW OF THE ON-SITE DECONSTRUCTION

Kevin Brooks and his crew conducted the deconstruction of 3224 Susquehanna property from March 27-April 7, 2006. The following is a photographic review of the project (Photos were provided by Brad Guy).

The unit chosen for the project was half of a twin building located in Philadelphia's Strawberry Mansion neighborhood. Strawberry Mansion was home to a number of Philadelphia's wealthiest families in the 19th Century. Since the middle of the 20th Century, the neighborhood has experienced economic decline and urban decay. The housing stock of the area represents a range of exuberant Victorian housing styles with bay windows, corner turrets, generous porches, and rich architectural details.

The house was chosen as part of the Neighborhood Transformation Initiative (NTI). NTI's basic goals are to eliminate vacant and dangerous buildings that are blighting influences on the City's neighborhoods and to provide support for neighborhood preservation initiatives.

The process of deconstruction has the potential to save both interior finishes of homes such as cabinetry, staircases, mantels, doors...

As well as structural and material elements such as joists, bricks, block, tin, and ornamental metal finishing.

Deconstruction is a favorable option for houses where large demolition equipment cannot be used for reasons such as low lying electrical wires and center row-home projects where the houses on either side cannot be damaged.

A KBS worker made a cut between the houses at the beginning of the project separating the house that was being deconstructed from the adjoining structure.

The contractors cleaned the debris from the roof so that they could gain access to the lumber that was below the built up roof.

The built up roof was then sectioned.

And removed in panels to gain access to the roof timbers.

Roof timbers are accessible for removal.

View of timbers from below.

As mentioned earlier, the Philadelphia housing stock has elements such as turrets like the one pictured here.

These items have an added artistic value and can claim a higher value when sold as an architectural item than recycled as scrap iron or metal.

It is material like this that can add value to deconstruction projects by diverting the cost of carefully removing them by selling the item as a price three or four times the cost of removing it.

Roof beams are exposed and in fairly good condition for resale.

"Tin Work" is also in the artistic category with the turrets, especially if it is easily accessible. One of the main things to consider when deconstructing is accessibility and ease of removal. "Every dollar in needs to be two or three dollars out." So, if it takes only a few minutes for one person to remove the tin and the sale price of the material justifies spending those few minutes, then the tin is worth recovering. The material pictured here is in poor condition, but still may be desired for gardens and other artistic projects.

Patching the pockets where the joists were removed is an important part of maintaining the integrity of the adjoining structure.

A better view of the saw cut used to separate the project's house from the adjoining structure.

More attractive pieces of tin from the lower section on the turret.

Sections of brown stone which, when salvaged, are often used for landscaping, but can be used to rebuild as well.

Some of the materials can be easily removed and transported, and can be reused without much labor or transportation restrictions.

Radiators are common in the Philadelphia housing stock and there are local businesses that retrofit and fix salvaged radiators. Decorative or odd sized radiators can be resold to homeowners looking to add functional, decorative pieces to their homes.

A lull was brought to the site to explore the "panelization" method of deconstruction.

In this method, complete sections are removed from the building and taken off-site for processing. In this case, an open lot or yard was proximal to the property so no transportation cost was incurred moving the panels. Shipping the panels to a location where the deconstruction works is performed is an expense that was circumstantially avoided.

Panelization has been successful for some structures. In this set of photographs, a section of a floor is being removed in full panels.

The panel is placed in the adjacent yard for further dismantlement.

Kevin Brooks preparing to transport materials to markets.

SECTION THREE: SUMMARY OF PROJECT RESULTS AND FINDINGS

Recovered Materials

The project diverted bricks, lumber, metal, and architectural features from disposal:

- Most of the bricks were used for on-site backfill.
- Eight hundred and forty linear feet of hemlock joists were sold to a broker for remilling ($1,680).
- Finished pine floor was sold ($500).
- Five hundred linear feet of recovered lumber were provided to a local source ($250).
- Two tons of metal (radiators, oil tank, duct work, gas lines, plumbing lines) were sold to local scrap dealers ($600).
- Architectural features have been marketed through KBS's architectural salvage business, Found Matter. Two decorative tin pieces and one wrought iron gate have been sold to date ($500).
- Kevin Brooks decided to keep the turret ($3,000 value) for his own use.
- In addition, eight hundred dollars ($800) worth of brown stone and two hundred dollars ($200) worth of decorative tin pieces are still for sale at Found Matter.

To summarize, the total value of the recovered materials is $7,530, and, as of December 2006, $6,530 of materials have been sold or directly used by KBS. The remaining $1,000 worth of materials is for sale in the Found Matter store.

Cost Data

At this point in time, there is very little, if any, deconstruction occurring in the removal of abandoned housing in Philadelphia. Mechanized demolition is the process for removing larger numbers of buildings at one time, and deconstruction is much more labor-intensive and costly than this form of building take-down. However, in Philadelphia, there are many units of housing attached to other structures in a row or twin, and these houses are often removed using a combination of mechanized and hand demolition, a more labor intensive process that safeguards the structural integrity of the adjoining house or houses.

Table 1 *(next page)* compares the current Susquehanna cost data with average costs for both hand and mechanized demolition. All labor costs are based on current prevailing wage. The Susquehanna project data demonstrate that deconstruction can be cost-competitive with hand demolition when there are sufficient recoverable materials with market value to
offset higher labor costs. The $8.94 net cost per square foot for the Susquehanna project falls within the range of the average hand demolition cost ($7.75 - $9.30).

Table 1: Comparison of Susquehanna Pilot Deconstruction vs. Average Demolition Costs

	Deconstruction	Hand Demolition	Mechanized Demolition
Gross costs/unit [1]	$ 23,823	$15,000–$18,000	$ 14,500-$15,000
Salvaged materials revenues/unit [2]	$ 6,530	$ 0	$ 0
Net costs/unit	**17,293**	**$15,000–$18,000**	**$14,500 - $15,000**
Square footage/unit [3]	1,935	1,935	1,935
Net costs/sq ft	**$ 8.94**	**$ 7.75–$9.30**	**$ 7.50-$7.75**

[1] Deconstruction costs are based on amount paid to KBS for deconstruction of one 3-story unit (3224 Susquehanna Ave) and exclude the costs to parge/stucco party wall. Hand and mechanized demolition costs are based on City-provided estimates for demolition of a 3-story unit, excluding parge and stucco of any party walls.
[2] Includes total amount of materials sold or used by KBS.
[3] Sq footage is based on measurements of the 3224 Susquehanna Ave 3-story unit.
Source: The Hamer Center for Community Design and the Institute for Local Self-Reliance, 2006.

ILSR and Kevin Brooks Salvage, the Susquehanna Project contractor believe that the costs could be even lower in future projects based on the following factors:

- On-time dumpster placement, removal, and replacement procedures – delays in placing and removing full dumpsters resulted in additional labor costs because workers had to handle some waste materials more than once.

- Better on-site efficiency utilizing improved removal practices based on lessons learned from the pilot. For example, the panelization work was a first-time effort for the crew and likely would require less time with more experience.

- Improving the economy of scale by removing more than one house at a time. The original goal was the deconstruction of two adjoining housing units that would have resulted in a lower cost per unit than from removal of a single unit.

Also, the final 3224 Susquehanna data may show a lower net cost if additional recovered materials are sold.

Conclusion

The Susquehanna Deconstruction project has been successful in:

- Demonstrating a cost-effective approach in removing lumber and other recoverable materials from abandoned houses. Current market development efforts will likely create more incentives for contractors to recover the materials. For example, architects can gain LEED credits for use of recovered materials. Habitat for Humanity Philadelphia has been working with ILSR in exploring the possibility of using reclaimed building materials in the Stiles Project, the City's first LEED-certified affordable housing.

- Introducing panelization as a viable consideration for deconstruction contractors. While Kevin Brooks admits that the panelization process was more costly than using his regular disassembly methodology, he attributes some of the added expense to his inexperience in using the new approach. He is open to using panelization in future work, especially for commercial and industrial buildings where there are no adjacent properties that can be damaged. He believes the technique is "cleaner," can require less on-site time, and allows for the disassembly of materials at an off-site location.

- Supporting the development of the emerging restoration industry in Southeastern Pennsylvania by increasing awareness of deconstruction and architectural salvage among the green building community, local architects, city officials, and the general public. This growing awareness is contributing to the non-profit organization, Second Chance, in its current efforts to open a major reuse retail yard in Philadelphia within the year. The new retail yard is expected to greatly increase the demand for used building materials in the region.

- Assisting KBS in obtaining additional deconstruction and architectural work and publicity. The Inquirer article about the project helped Kevin Brooks secure two additional jobs, provided more work leads, and resulted in publicity in a Philadelphia Weekly newspaper. One of the projects is the interior deconstruction of 70,000 square feet of warehouse space and the full deconstruction of two warehouse structures in Phoenixville, Pennsylvania. In the second project, KBS removed dimensional lumber and the truss system from an 1850s structure in the Germantown section of Philadelphia. Three thousand board feet of hemlock were recovered and sold for reuse in a restaurant renovation project.

A secondary benefit of the project is the fact that owners stepped forward and reclaimed three of the buildings that were designated for demolition: 3947 and 3949 Aspen Street, and 3222 Susquehanna Avenue. It is always preferable to reclaim rather than deconstruct buildings.

Finally, ILSR acknowledges that the project success is due to the teamwork of all the participating partners, and trusts that ongoing partnerships will build on the project momentum and continue to support the emerging restoration economy in Southeastern Pennsylvania.

APPENDIX A

Request for Qualifications (RFQ) Deconstruction for Urban Revitalization Project

1.0 Background

The Institute for Local Self-Reliance (ILSR) is issuing this RFQ for the deconstruction and recovery of building materials from one or more row house buildings condemned by the City of Philadelphia. Deconstruction is systematic building dismantling for the purposes of maximum recovery of primarily, reusable, and secondarily, recyclable, materials, in a safe and cost-effective manner. The ILSR recognizes that the City of Philadelphia has conditions of neglected and abandoned buildings while it also has needs for investment and affordable housing. Deconstruction not only provides opportunities for mitigating landfill waste but also offers local job and economic development opportunities and serves as a source of building materials for use in construction and value-adding industries in the City of Philadelphia. A typical Philadelphia row house is two to three stories and from 1800+- to 2400+- square feet, respectively. In a typical year, several hundred row houses will be condemned and demolished by the City.

2.0 Who May Submit

Any firm or association of firms formally organized to provide the required services. This includes contractors, specialty contractors, demolition, salvage and recycling companies, charitable institutions, non-profit organizations that accept used building materials, or other interested parties who will collaborate specifically for this project. No distinction is made between a formally recognized entity and a project-specific association of multiple parties, both are known as "Proposer" before contract award and "Contractor" after award.

3.0 Project Summary

Deconstruction is a process that is commensurate with the hand demolition methods employed for urban row houses that share common walls. Deconstruction employs an incremental labor effort for more careful removal of materials to the ground and their handling and processing for reuse or recycling. The construction and demolition industry will benefit from advances in techniques and technology that enable it to recover materials more efficiently, thereby avoiding disposal costs, increasing economic opportunities and reducing environmental impacts. It will also benefit from sources of historic and, in some cases, higher-quality materials that are contained in the existing building stock of older cities such as Philadelphia. ILSR and the Penn State University Hamer Center for Community Design (PSU-HC) are working to determine technical and organizational strategies for incorporating the practice of deconstruction for materials reuse as an economically viable means for whole building removals in the City of Philadelphia. This project proposes to demonstrate innovative techniques for dismantling urban row houses to reclaim the maximum amount of roof and floor structural lumber materials in the most cost-effective manner for reuse and recycling within the local economy of Philadelphia.

The partners in this project will present findings from this project to stakeholders with an interest in building deconstruction and reuse of building materials including the City of Philadelphia, the Delaware Valley Green Building Council and the American Institute of Architects/Philadelphia Chapter Committee on the Environment. In addition, findings will be communicated through the City of Philadelphia's DOE Rebuild America partnership to the more than 350 participating local governments.

4.0 Services to be Required

The services that will be required in this project include:

- the selective dismantling of one or more row houses using innovative techniques to maximize the recovery of reusable materials while minimizing costs and time-on-site;
- securing all necessary permits;
- coordination with the City for utility disconnects;
- coordination with City for inspecting, removing and properly handling and disposing of asbestos containing materials and any other hazardous materials found before or during deconstruction;
- recovering flooring, sheathing and framing lumber for reuse, and other salvageable items from building(s) site for reuse and recycling;
- removing all building-related non-hazardous waste from the site (except as allowed for site fill), and their redirection for recycling as feasible;
- preparing site close-out to the minimum requirements of the City of Philadelphia demolition specification;
- value engineering;
- documentation and communication of project resources utilization, scheduling, materials disposal and salvage quantities; and
- allowing site access (with supervision and waiver of liability) by ILSR and PSU-HC for data collection, analysis and reporting, and transfer of lessons-learned

5.0 Submittal Requirements

There is no page limit on submittals

1. Cover letter on company letterhead with contact(s) directly related to this project
2. List of no more than five (5) previous projects of similar type and scope
3. Resumes of senior personnel assigned to this project including relevant certifications and licenses
4. List of sub-contractors including those intended for reuse, remanufacturing or recycling
5. Assurance of bonding capacity
6. Proof of contractor's license and insurance in the Commonwealth of Pennsylvania
7. Proof of minimum three (3) years of experience with same or similar projects
8. If applicable, certification of minority, small, women-owned, or disadvantaged business
9. Minimum three (3) client references

6.0 Additional Considerations for Evaluation

- Contractor location in the general geographical area of the project and demonstrated knowledge of the locality of the project
- Capacity to combine deconstruction with reuse of recovered materials directly by Contractor
- Capacity for resale or reuse of seventy-five percent (75%) of recovered within a 25-mile radius of the project site
- Capacity to include off-site secondary processing and storage within 25-mile radius of project site

7.0 Schedule

- January 20, 2005 – Request for Qualifications Available and Mailed-Out
- March 11, 2005 – Statement of Qualifications Due, postmarked or hand-delivered
- TBD - Invitation to Pre-Bid Meeting / Site Visit and Issue Request for Bid Proposals
- TBD – Bid Proposal Questions Due in Writing, by e-mail only
- TBD – Bid Proposal Questions Responses in Writing, by e-mail only
- TBD – Bid Proposal Due, postmarked or hand-delivered
- TBD – Bid Proposal Opening and Contractor Selection
- TBD – Contract Award Date
- TBD - Substantive Completion
- TBD - Contract Close-Out

8.0 Basis of Award

An invitation to submit a bid proposal will be awarded to the three (3) firms deemed most qualified. Contract will be awarded to Contractor offering most favorable terms to the ILSR. Price, qualifications and capabilities, proposed techniques to recover materials, and manage waste, disposition of recovered materials, personnel, and schedule will be considered in combination.

Statement of Qualification shall be submitted to:

Linda Knapp, ILSR/Philadelphia
129 West Gorgas Lane
Philadelphia, PA 19119
T: 215-843-7364 (Philadelphia)
E-mail: lknapp@netreach.net

APPENDIX B

Request for Bids (RFB) Deconstruction for Urban Revitalization Project

1.0 Background

The Institute for Local Self-Reliance (ILSR) is issuing this RFB for 1) the deconstruction and recovery of building materials from the building at 3222 West Susquehanna Avenue, Philadelphia, PA; and 2) an Alternative Bid for both 3222 and 3224 West Susquehanna Avenue. Deconstruction is systematic building dismantling for the purposes of maximum recovery of primarily reusable (and secondary recyclable) materials, in a safe and cost-effective manner.

2.0 Who May Submit

Any firm or association of firms who responded to the RFQ dated January 20, 2005 and were then invited by ILSR to submit a proposal.

3.0 Project Summary

The two houses in this project were condemned by the City of Philadelphia under the Neighborhood Transformation Initiative (NTI). All NTI specifications will apply for this project, as highlighted below. Deconstruction is a process that is commensurate with the hand demolition methods employed by NTI to remove urban row houses that share common walls. Deconstruction employs an incremental labor effort for more careful removal of materials to the ground and their handling and processing for reuse or recycling. ILSR and the Penn State University Hamer Center for Community Design (PSU-HC) are working to determine technical and organizational strategies for incorporating the practice of deconstruction for materials reuse as an economically viable means for whole building removals in the City of Philadelphia. This project proposes to demonstrate innovative techniques for dismantling urban row houses to reclaim the maximum amount of structural and finish lumber materials in the most cost-effective manner for reuse and recycling within the local economy. ILSR and the PSU-HC are exploring with the local community the use of some of the recovered materials from this project.

4.0 Techniques to be Investigated

While we suggest using the panelized deconstruction approach described below, we are open to receiving bids with variations of this technique that maximize the recovery of wood materials, stone, and face brick for reuse while minimizing labor costs and time-on-site. This project seeks to investigate and demonstrate a cost-effective method to optimize combined mechanical and hand deconstruction techniques.[1] The method developed will serve as a model for future deconstruction of other NTI buildings.

Panelized deconstruction approach: A previous investigation in a different city found that building removal with minimal loss of salvageable wood materials is accomplishable at 50% labor-time compared to a whole-building hand deconstruction using combinations of mechanical and hand techniques. This was accomplished by the use of selective cutting and lifting to remove wood-framed roof, floor and wall assemblies in panels as per the scale and load capacity of mechanical lifting equipment, safety, and site access. Panels are then placed on the ground level or on heavy-duty saw horses for further processing, de-nailing, trimming, etc. into their individual wood components.

[1] Cost-effective means the use of an overall process that decreases project time over hand deconstruction and that lowers costs with minimal loss of recovered materials, compared to hand deconstruction.

An alternative is the loading of panels onto a trailer for removal to a secondary site for additional processing further reducing time-on-site, or thirdly, the reuse of the panels directly. In order to achieve diversion goals, brick, stone and masonry will be removed by either hand or mechanical dismantling as per the quality of brick and type of mortar.

5.0 Services to be Required

The services that will be required in this project include:

- Proof of contractor license in the City of Philadelphia.
- Enrollment in the Neighborhood Transformation Initiative's (NTI)'s Owner Controlled Insurance Program (OCIP) and meeting all requirements for OCIP such as off-site insurance.[2] For more information on OCIP, download the Standard Specifications for NTI Demolition Packages (Section 00801, OCIP Bid Insurance Requirements, page 31) on the web site: http://bids.phila.gov/forms/ntis.pdf
- Insurance and bonding as per the City's specifications under its NTI OCIP.
- Prevailing wage rates will apply to the project and Contractor will be required to submit certified payrolls to ILSR at project completion.
- Secure all necessary demolition permits in coordination with Institute for Local Self-Reliance (ILSR) and the City of Philadelphia.
- Coordination with the City for utility disconnects as needed; the City has requested utility disconnects as of May 25, 2005. Contractor will be responsible for confirmation – (One Call System number is 800-242-1776).
- Deconstruction plan including a materials management plan and salvage and waste monitoring.
- Temporary site fencing for job-site.
- Protection and/or management plan to protect adjacent properties and minimize any public nuisance or safety hazards, including potential for structural stabilization of adjacent properties if deemed necessary during project.
- Asbestos-containing materials abatement as per Commonwealth regulations (using licensed abatement contractor) based upon asbestos survey performed by the City of Philadelphia and provided. A 5-day notification will be required unless an emergency waiver is requested by the City. Air monitoring and clearance will be provided by the City (contact Martin Lieberman 215-683-4447).
- The selective dismantling of house(s) using innovative techniques to maximize the recovery of reusable materials while minimizing costs and time-on-site.
- Recovering minimum of 50% of wood flooring, sheathing, framing lumber, for processing for reuse, and other salvageable items from building(s) site for reuse and recycling, to include 75% of brick and stone for recycling (including use as on-site fill). It is understood that the amount of lumber recovered for processing may not result in a net 50% reusable materials, but it is expected that 50% of wood materials are recovered intact for reuse if feasible after culling and processing.
- Removal of all above ground building-related debris resulting from this structure.
- Site close-out to the agreed upon requirements of the City of Philadelphia - to include site clearing and fill, top-soil, seeding for either one or both properties. If only 3222 West Susquehanna Avenue is removed in this project, stuccoing will not be required for the newly exposed east wall of 3224 West Susquehanna Avenue.

[2]The City of Philadelphia pays for all premiums for OCIP coverage, which includes workers compensation and employers liability insurance. It will be Contractor's responsibility, prior to project start-up, to enroll in the OCIP program through ILSR and to show proof of off-site insurance as outlined in the NTI manual.

- Documentation and communication of project resources utilization, scheduling, materials disposal and salvage quantities in coordination with ILSR and Penn State University Hamer Center (PSU-HC).
- Allowing site access (with supervision and waiver of liability) by ILSR and PSU-HC for data collection, analysis and reporting, and transfer of lessons-learned for the duration of the project.

6.0 Submittal Requirements

There is no page limit on submittals:

1. Cover letter on company letterhead with contact(s) directly related to this project.
2. Price not-to-exceed for:
    1) Deconstruction of 3222 West Susquehanna Avenue – with contractor retaining ownership of all recovered materials.
    2) Deconstruction of 3222 and 3224 West Susquehanna Avenue – with contractor retaining ownership of all recovered materials.
3. Projected start date on-site is July 18, 2005. Both the ILSR/City of Philadelphia and the ILSR/contractor contracts must be in place before start-up.
4. Deconstruction plan – to include:
    - Safety and environmental health plan, including asbestos containing materials removal and lead-based paint materials work-plan.
    - Types of materials to be reused and recycled and the salvage goals for each type (beyond materials that are acceptable as on-site fill); in other words reusable and recyclable materials off-site.
    - Sequence, schedule, methods, labor and equipment to be utilized for deconstruction.
    - Plan for on-site storage or/and sales of reclaimed materials (if proposed) or removal and off-site storage of reusable materials and off-site recycling of materials to meet diversion goals of project.
    - Preliminary list of all sub-contractors to be employed in this project.
    - Preliminary list of reuse and recycling outlets, and both hazardous and C&D waste disposal facilities to be utilized in this project.

7.0 Deadline

Bids must be received by ILSR by 5:00 PM EST, Tuesday, June 14, 2005. Bids can be emailed or mailed. Faxes are not acceptable.

Mail bid to:
Linda Knapp
129 West Gorgas Lane
Philadelphia, PA 19119

OR

e-mail to Linda Knapp at lknapp@netreach.net

8.0 Basis of Award

Contract will be awarded to Contractor offering most favorable terms to ILSR. Price, schedule, deconstruction plan, ability to work closely with ILSR and PSU on this pilot project, and qualifications will be considered in combination.

BUILDING DEMOLITION SAFETY CHECKLIST

The following safe work practices must be observed in connection with building demolition.

1. Restrict access to the work site by use of engineer tape or rope to maintain a 15-20 foot buffer around the work area/building. In particular, access must be restricted below areas where overhead demolition is in progress.
2. Children under 16 years of age are not allowed within the cordoned area to perform hazardous work.
3. Hard hats and safety shoes should be worn at all times, and are required if working below an area where others are working (if prohibited by religion, this requirement can be exempted if overhead hazards are minimized or eliminated using risk management practices). Safety glasses or goggles, gloves and hearing protection are also required when hazards dictate.
4. Demolition of buildings, including the chimney, must be performed in a proper manner as to prevent accidental collapse of the structure. A demolition plan should be developed prior to the start of the demolition. Structural or load supporting members shall not be cut or removed until the overlaying structure has been removed. Demolition of exterior wall and floor construction should proceed downward after the roof has been removed. Each story of multi-story structures must be dismantled before commencing with removal of floors and walls in the story below.
5. Electric, gas, and water, telephone and cable TV will be disconnected from the building prior to demolition activities. All utilities must remain shut off.
6. In order to prevent glass fragment hazards, glass materials will not be dropped or broken out.
7. If dropping debris through a floor hole, the area around where the material is dropped will be guarded. Floor openings should be covered or guarded with a railing when not in use as material drops.
8. Waste materials and rubbish shall be placed in appropriate containers.
9. Hand and power tools shall be inspected and determined to be in good condition before each use.
10. Throwing tools or materials from one location to another or from one person to another, or dropping them to lower levels is not permitted.
11. Lumber should be stacked level, stable and self-supporting. Lumber piles shall not exceed six feet in height. Reusable lumber shall have nails withdrawn, before stacked for storage. Loose nails shall be policed up daily.
12. All obstructions or projections into an access way shall be removed or conspicuously marked. Projections that are sharp or pointed shall be covered with protective material. Work areas and means of access shall be maintained free of equipment or material which could obstruct passage or cause a trip hazard.
13. Individuals working on top of a roof or along unguarded edges above six feet must be tied off to a fall protection system. This is a mandatory requirement for all contractors and installation employees. Falling from elevation is one of the most significant hazards faced on demolition/deconstruction projects.

14. Work will be suspended on roofs or on top of walls when weather conditions constitute a hazard (lightning, high winds, wet or icy conditions, etc).
15. Some material(s) located in the building(s) may contain hazardous substances such as asbestos, and lead-based paint. Adequate precautions must be taken when removing this material(s).
16. If there is an employer/employee relationship between a successful bidder and workers on the demolition / deconstruction site, all work is subject to OSHA regulation. Failure to follow OSHA regulations in this situation can result in fines and / or civil / criminal liability.
17. If personnel are injured performing this demolition to an extent requiring emergency medical attention, they may report to the nearest Hospital Emergency Room, or dial 911 for an ambulance.
18. Contractor will report all injuries requiring emergency medical attention to ILSR no later than the next work day of injury.